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Optoelectronics Division
TRW Electronic Components Group

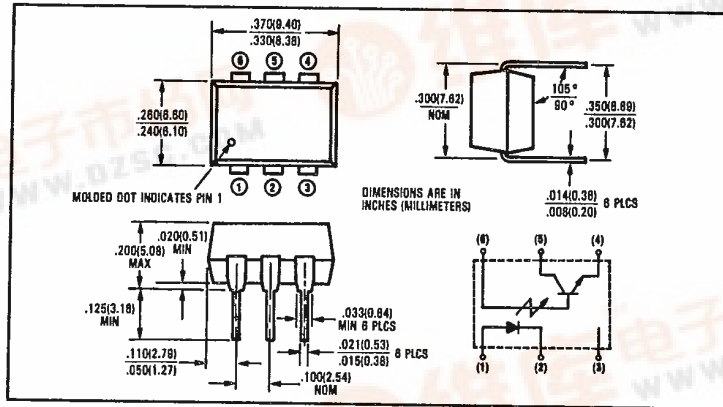
1987 Cost Saver Product!
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TRW

Product Bulletin 5198
January 1985

T-41-83

Optically Coupled Isolators Type OPI2100



Features

- 4 kV isolation
- High current transfer ratio
- Direct interface with up to 10 TTL loads
- UL recognized File No. E58730

Description

The OPI2100 consists of a gallium arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard plastic six pin dual-in-line package. This device is designed to directly drive from 1 to 10 TTL loads and has very good output sinking characteristics at low sink current.

Absolute Maximum Ratings (TA = 25°C unless otherwise noted)

Input-to-Output Isolation Voltage.....	±4000 VDC ⁽¹⁾
Storage Temperature Range.....	-55°C to +150°C
Operating Temperature Range.....	-55°C to +100°C
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron) ⁽²⁾	260°C

Input Diode

Forward DC Current.....	60 mA
Peak Forward Current (1 μs pulse, 300 pps).....	3.0 A
Reverse Voltage.....	6.0 V
Power Dissipation.....	100 mW ⁽³⁾

Output Transistor

Collector-Emitter Voltage.....	30 V
Collector-Base Voltage.....	30 V
Emitter-Collector Voltage.....	6.0 V
Power Dissipation.....	150 mW ⁽⁴⁾

Notes:

- (1) Measured with input diode leads shorted together and output leads shorted together.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) Derate linearly 1.33 mW/°C above 25°C.
- (4) Derate linearly 2.0 mW/°C above 25°C.

T-41-83

Type OPI2100

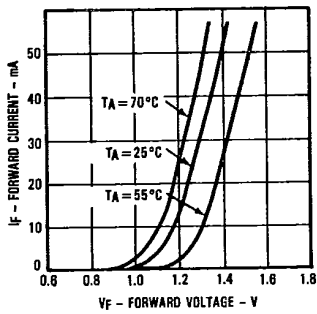
Electrical Characteristics (TA = 25°C unless otherwise noted)

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Input Diode						
V _F	Forward Voltage			1.40	V	I _F = 40 mA
I _R	Reverse Current			10.0	μA	V _R = 6.0 V
Output Phototransistor						
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	30			V	I _C = 1.00 mA
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	6.0			V	I _C = 100 μA
V _{(BR)CBO}	Collector-Base Breakdown Voltage	30			V	I _C = 10.0 μA
I _{CEO}	Collector-Emitter Dark Current			60	nA	V _{CE} = 5.0 V
h _{FE}	DC Current Gain		100			V _{CE} = 5.0 V, I _C = 10.0 mA
Coupled						
I _C /I _F	DC Current Transfer Ratio	150			%	V _{CE} = 5.0 V, I _F = 10.0 mA
I _C /I _F	DC Current Transfer Ratio	60			%	V _{CE} = 6.0 V, I _F = 3.2-32 mA
V _{CE(SAT)}	Saturation Voltage			0.60	V	I _C = 16.0 mA, I _F = 32 mA

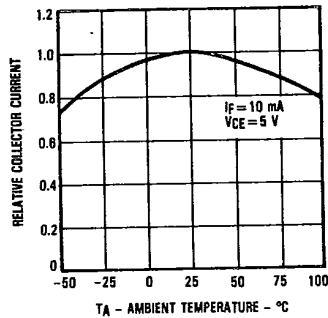


Typical Performance Curves

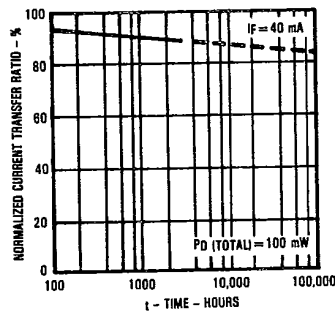
Diode Forward Current vs Diode Forward Voltage



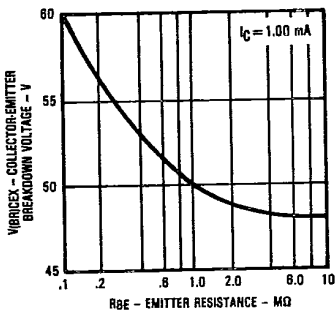
Relative Collector Current vs Ambient Temperature



Normalized Current Transfer Ratio vs Time



Collector-Emitter Breakdown Voltage vs Base-Emitter Resistance



TRW reserves the right to make changes at any time in order to improve design and to supply the best product possible. Plastic color may vary.
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